# Operator's Manual

## Series 1000
## Hydrostatic Garden Tractor
Model 1222

(14AB13CH710)

**IMPORTANT:** Read safety rules and instructions carefully

**Warning:** This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your Cub Cadet dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

**Cub Cadet LLC., P.O. Box 361131, Cleveland, OH 44136-0019**

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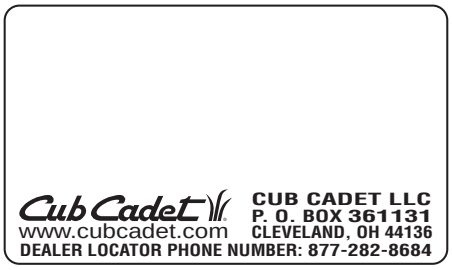
# FINDING MODEL NUMBER

This Operator's Manual is an important part of your new garden tractor. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.

**Before you start assembling your new equipment**, please locate the model plate under the seat of the tractor and copy the information in the space provided below. A sample model plate is also given below. This information will be necessary to use the manufacturer's web site and/or help from the Customer Support Department or an authorized service dealer.




**Copy the model number here:** _____

**Copy the serial number here:** _____

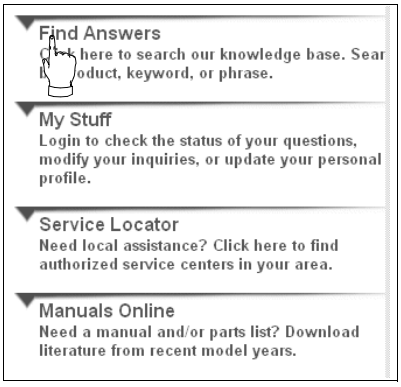
# CUSTOMER SUPPORT

***Please do NOT return the unit to the retailer from where it was purchased, without first contacting Customer Support.***

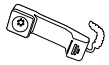
If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, you can seek help from the experts. Choose from the options below:

Visit **cubcadet.com** for many useful suggestions. Click on Customer Support button and you will get the four options reproduced here. Click on the appropriate button and help is immediately available.

*The answer you are looking for could be just a mouse click away!*


Find Answers
Click here to search our knowledge base. Search by product, keyword, or phrase.
My Stuff
Login to check the status of your questions, modify your inquiries, or update your personal profile.
Service Locator
Need local assistance? Click here to find authorized service centers in your area.
Manuals Online
Need a manual and/or parts list? Download literature from recent model years.

*The answer you are looking for could be just a mouse click away!*



To reach the Customer Dealer Referrral Line, please call **1- (877) 282-8684** .

The **engine** manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's/Operator's Manual, at the end of this manual, for more information.

# SECTION 1: IMPORTANT SAFE OPERATION PRACTICES

**WARNING:** This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—heed its warning.

**DANGER:** This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

**WARNING:** Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## General Operation

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. To help avoid blade contact or a thrown object injury, keep bystanders, helpers, children and pets at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
6. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys, and other foreign objects which could be picked up and thrown by the blade(s). Thrown objects can cause serious personal injury.
7. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like. Also, avoid discharging material against a wall or obstruction which may cause discharged material to ricochet back toward the operator.
8. Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
9. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Loose fitting clothes and jewelry can be caught in movable parts. Never operate this machine in bare feet or sandals.
10. Be aware of the mower and attachment discharge direction and do not point it at anyone. Do not operate the mower without the discharge cover or entire grass catcher in its proper place**.**
11. Do not put hands or feet near rotating parts or under the cutting deck. Contact with the blade(s) can amputate hands and feet.
12. A missing or damaged discharge cover can cause blade contact or thrown object injuries.
13. Stop the blade(s) when crossing gravel drives, walks, or roads and while not cutting grass.
14. Watch for traffic when operating near or crossing roadways. This machine is not intended for use on any public roadway.
15. Do not operate the machine while under the influence of alcohol or drugs.
16. Mow only in daylight or good artificial light.
17. Never carry passengers.
18. Disengage blade(s) before shifting into reverse. Back up slowly. Always look down and behind before and while backing to avoid a back-over accident.
19. Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
20. Disengage blade(s), set parking brake, stop engine and wait until the blade(s) come to a complete stop before removing grass catcher, emptying grass, unclogging chute, removing any grass or debris, or making any adjustments.
21. Never leave a running machine unattended. Always turn off blade(s), place transmission in neutral, set parking brake, stop engine and remove key before dismounting.
22. Use extra care when loading or unloading the machine into a trailer or truck. This unit should not be driven up or down ramp(s), because the unit could tip over, causing serious personal injury**.** The unit must be pushed manually on ramp(s) to load or unload properly.
23. Muffler and engine become hot and can cause a burn. Do not touch.
24. Check overhead clearances carefully before driving under low hanging tree branches, wires, door openings etc., where the operator may be struck or pulled from the unit, which could result in serious injury.
25. Disengage all attachment clutches, depress the brake pedal completely and shift into neutral before attempting to start engine.
26. Your machine is designed to cut normal residential grass of a height no more than 10”. Do not attempt to mow

through unusually tall, dry grass (e.g., pasture) or piles of dry leaves. Dry grass or leaves may contact the engine exhaust and/or build up on the mower deck presenting a potential fire hazard.

27. Use only accessories and attachments approved for this machine by the machine manufacturer. Read, understand and follow all instructions provided with the approved accessory or attachment.
28. Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower-related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.
29. If situations occur which are not covered in this manual, use care and good judgment. Contact Cub Cadet Dealer for assistance.

## Slope Operation

Slopes are a major factor related to loss of control and tip-over accidents which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15 degrees as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

### Do:

1. Mow up and down slopes, not across. Exercise extreme caution when changing direction on slopes.
2. Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
3. Use slow speed. Choose a low enough speed setting so that you will not have to stop or shift while on the slope. Tires may lose traction on slopes even though the brakes are functioning properly. Always keep machine in gear when going down slopes to take advantage of engine braking action.
4. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
5. Use extra care with grass catchers or other attachments. These can change the stability of the machine.
6. Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction. Rapid engagement or braking could cause the front of the machine to lift and rapidly flip over backwards which could cause serious injury.
7. Avoid starting or stopping on a slope. If tires lose traction, disengage the blade(s) and proceed slowly straight down the slope.

### Do Not:

1. Do not turn on slopes unless necessary; then, turn slowly and gradually downhill, if possible.
2. Do not mow near drop-offs, ditches or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff, ditch, or if an edge caves in.
3. Do not try to stabilize the machine by putting your foot on the ground.
4. Do not use a grass catcher on steep slopes.
5. Do not mow on wet grass. It may cause sliding.
6. Do not shift to neutral and coast downhill. Over-speeding may cause the operator to lose control of the machine resulting in serious injury or death.
7. Do not tow heavy attachments (e.g. loaded dump cart, lawn roller, etc.) on slopes greater than 5 degrees. When going down hill, the extra weight tends to push the tractor and may cause you to loose control. (e.g. tractor may speed up, braking and steering ability may be reduced, attachment may jack-knife and tractor may overturn).

## Children

1. Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. They do not understand the dangers. Never assume that children will remain where you last saw them.
    a. Keep children out of the mowing area and in watchful care of a responsible adult other than the operator.Be alert and turn machine off if a child enters area.
    b. Before and while backing, look behind and down for small children.
    c. Never carry children, even with the blade(s) shut off. They may fall off and be seriously injured or interfere with safe machine operation.
    d. Use extreme care when approaching blind corners, doorways, shrubs, trees or other objects that may block your vision of a child who may run into the machine.
    e. Disengage the cutting blade(s) before shifting in reverse. The "No-Cut-In Reverse" feature is a reminder not to cut in reverse and to help avoid back over accidents. Do not defeat it.
    f. Keep children away from hot or running engines. They can suffer burns from a hot muffler.
    g. Remove key when machine is unattended to prevent unauthorized operation.
8. Never allow children under 14 years to operate the machine. Children 14 years old and over should read and understand the operation and safety rules in this manual and should be trained and supervised by a parent.

## Towing

1. Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.
2. Follow the manufacturers recommendation for weight limits for towed equipment and towing on slopes.
3. Never allow children or others in or on towed equipment.
4. On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
5. Travel slowly and allow extra distance to stop.
6. Do not shift to neutral and coast downhill.

## Service

### Safe Handling Of Gasoline:

1. **To avoid personal injury or property damage** use extreme care in handling gasoline. **Gasoline is**

extremely flammable and the vapors are explosive**.** Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.

a. Use only an approved gasoline container.
b. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
c. When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
d. Keep the nozzle in contact with the rim of the fuel container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
e. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
f. Never fuel machine indoors.
g. Never remove gas cap or add fuel while the engine is hot or running. Allow engine to cool at least two minutes before refueling.
h. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to allow space for fuel expansion.
i. Replace gasoline cap and tighten securely.
j. If gasoline is spilled, wipe it off the engine and equipment. Move unit to another area. Wait 5 minutes before starting the engine.
k. To reduce fire hazards, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
l. Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
m. Allow a machine to cool at least 5 minutes before storing.

### General Service:

1. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless, and deadly gas.
2. Before cleaning, repairing, or inspecting, make certain the blade(s) and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
3. Periodically check to make sure the blades come to complete stop within approximately (5) five seconds after operating the blade disengagement control. If the blades do not stop within the this time frame, your unit should be serviced professionally by an authorized Service Dealer.
4. Check brake operation frequently as it is subjected to wear during normal operation. Adjust and service as required.
5. Check the blade(s) and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade(s) for damage (e.g., excessive wear, bent, cracked).
   Replace the blade(s) with the original equipment manufacturer's (O.E.M.) blade(s) only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
6. Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
7. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
8. Never tamper with the safety interlock system or other safety devices. Check their proper operation regularly.
9. After striking a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before starting and operating.
10. Never attempt to make adjustments or repairs to the machine while the engine is running.
11. Grass catcher components and the discharge cover are subject to wear and damage which could expose moving parts or allow objects to be thrown.
    For safety protection, frequently check components and replace immediately with original equipment manufacturer's (O.E.M.) parts only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
12. Do not change the engine governor settings or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
13. Maintain or replace safety and instruction labels, as necessary.
14. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.

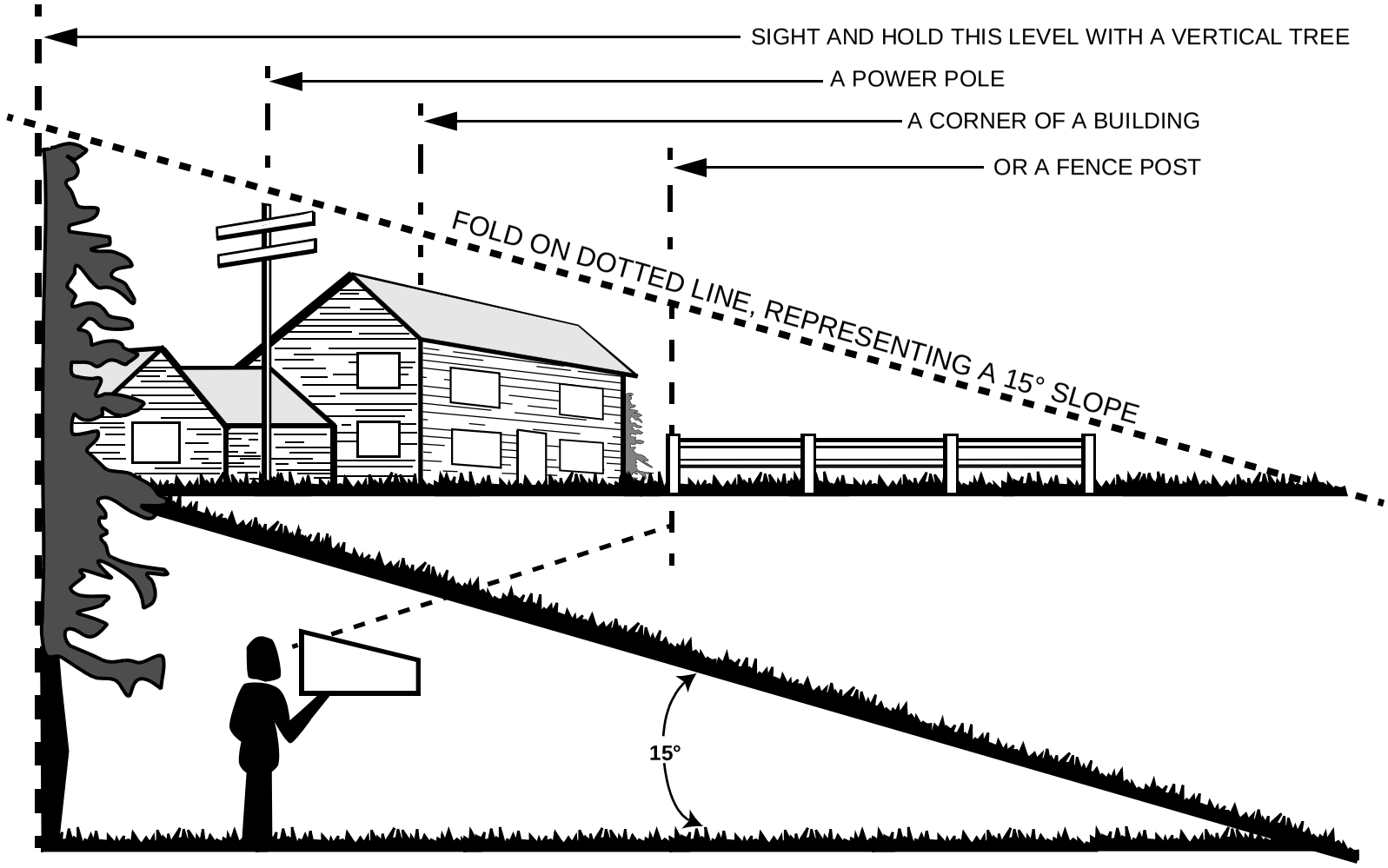
## Your Responsibility

- Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

TO REDUCE THE RISK OF INJURY, DO NOT OPERATE UNLESS DISCHARGE COVER OR GRASS CATCHER IS IN ITS PROPER PLACE. IF DAMAGED, REPLACE IMMEDIATELY.
DANGER
KEEP HANDS and FEET AWAY

DANGER
AVOID SERIOUS INJURY OR DEATH
KEEP HANDS AND FEET AWAY FROM ROTATING PARTS.
REMOVE OBJECTS THAT CAN BE THROWN BY THE BLADE IN ANY DIRECTION. WEAR SAFETY GLASSES.
DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND.
NEVER CARRY CHILDREN EVEN WITH BLADES OFF.
USE EXTRA CAUTION ON SLOPES. DO NOT MOW SLOPES GREATER THAN 10° MOW UP AND DOWN, NOT ACROSS.
AVOID SUDDEN TURNS, USE LOW GEAR.
MAX 10°
S30536
READ OPERATOR'S MANUAL. KEEP SAFETY DEVICES IN PLACE AND WORKING.

## SECTION 2: SLOPE GAUGE


SIGHT AND HOLD THIS LEVEL WITH A VERTICAL TREE
A POWER POLE
A CORNER OF A BUILDING
OR A FENCE POST
FOLD ON DOTTED LINE, REPRESENTING A 15° SLOPE
15°

WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.
Operate RIDING mowers up and down slopes, never across the face of slopes.

# SECTION 3: SETTING UP THE TRACTOR

## Before Assembly

- If the battery cables are already connected, proceed to the next set of instructions for set-up.
- Any reference here to the RIGHT or LEFT side of the tractor is observed from operator's position.

## Attaching Battery Cables

**NOTE:** *The positive battery terminal is marked Pos. (+). The negative battery terminal is marked Neg. (–).*

- The positive cable (heavy red wire) is secured to the positive battery terminal (+) with a hex bolt and hex nut at the factory. Make certain that the rubber boot covers the terminal to help protect it from corrosion.
- Remove the hex bolt and wing nut from the negative cable.
- Remove the black plastic cover, if present, from the negative battery terminal and attach the negative cable (heavy black wire) to the negative battery terminal (–) with the bolt and wing nut.
- Make certain the hold-down rod is in position over the battery, securing it in place. See Figure 1.

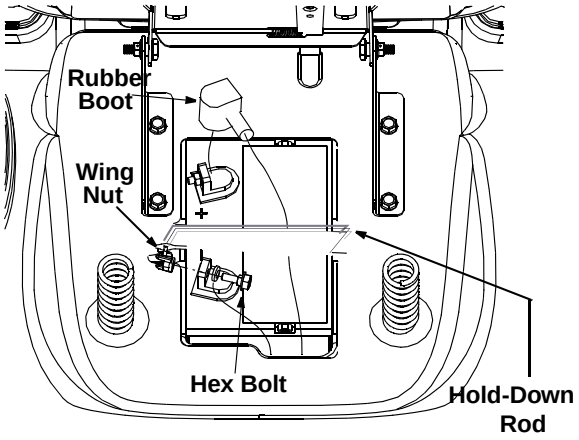



**Figure 1**

**NOTE:** *If the battery is put into service after the date shown on top of battery, charge the battery as instructed* on *page 21 of this manual prior to operating the tractor.*

## Gas and Oil Fill-Up

The gasoline tank is located under the hood and has a capacity of either two or three gallons. Do not overfill.

Service the engine with gasoline and oil as instructed in the separate *engine manual* packed with your tractor. Read instructions carefully.

**IMPORTANT:** Your tractor is shipped with motor oil in the engine. However, you must check the oil level before operating. Be careful not to overfill.

**WARNING:** Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes, and other sources of ignition.

## Shipping Brace Removal

**WARNING:** Make sure the tractor engine is off. Remove ignition key, and set the parking brake before removing the shipping brace.

- Locate the shipping brace and accompanying warning tag on the right side of the tractor, between the discharge chute and the deck. See Figure 2.
- While holding the discharge chute with your left hand, remove the shipping brace with your right hand by grasping it between your thumb and index finger and rotating it clockwise.

**IMPORTANT:** The shipping brace, used for packaging purposes only, must be removed and discarded before operating the tractor.

**WARNING:** The mowing deck is capable of throwing objects. Failure to operate the tractor without the discharge cover in the proper operating position could result in serious personal injury and/or property damage.

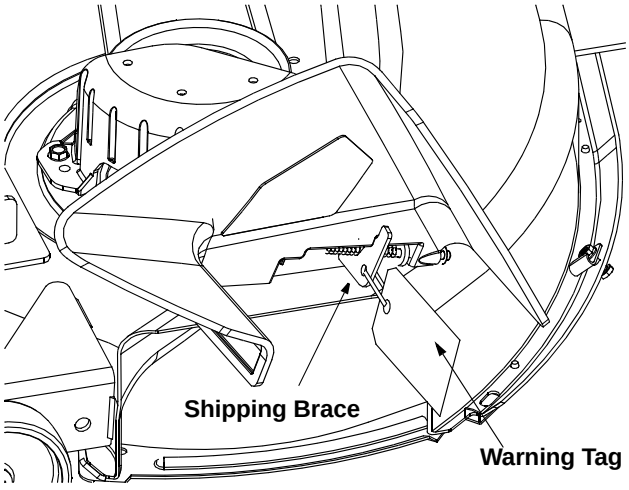



**Figure 2**

# SECTION 4: KNOW YOUR GARDEN TRACTOR

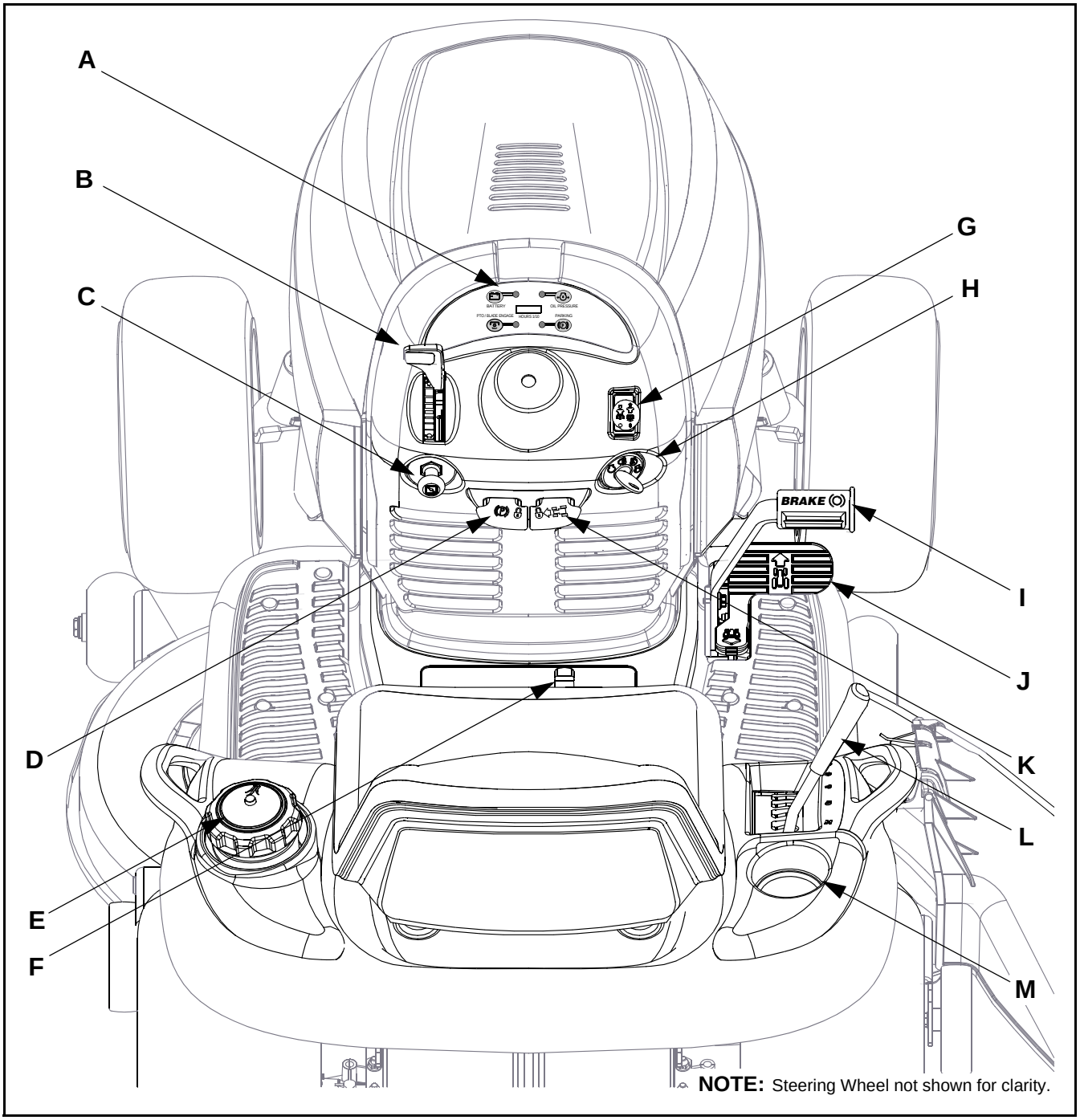
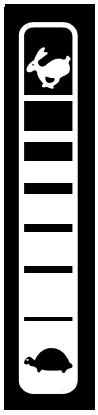



**Figure 3**

- **A** Systems Indicator Monitor/Hour Meter
- **B** Throttle Control Lever
- **C** Choke Control
- **D** Parking Brake Lever
- **E** Fuel Tank Cap
- **F** Seat Adjustment Lever
- **G** PTO (Blade Engage) Knob
- **H** Ignition Switch
- **I** Brake Pedal
- **J** Drive Pedal
- **K** Cruise Control
- **L** Deck Lift Lever
- **M** Cup Holder

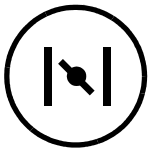
## Throttle Control Lever




The throttle control lever is located on the right side of the tractor's dash panel. This lever controls the speed of the engine. When set in a given position, the throttle will maintain a uniform engine speed.

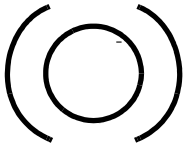
**IMPORTANT:** When operating the tractor with the cutting deck engaged, be certain that the throttle lever is **always** in the FAST (rabbit) position.

## Choke Control



Choke control can be found on the left side of the dash panel and is activated by pulling the knob outward. Activating the choke control closes the choke plate on the carburetor and aids in starting the engine. Refer to page 11 of this manual for detailed starting instructions.

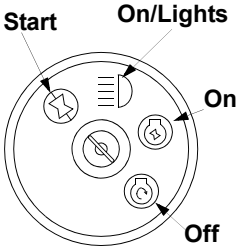
## Brake Pedal



The brake pedal is located on the right front side of the tractor above the drive pedal along the running board. The brake pedal can be used for sudden stops or setting the parking brake.

**NOTE:** *Brake pedal must be fully depressed to activate the safety interlock switch when starting the tractor.*

## Ignition Switch




To start the engine, insert the key into the ignition switch and turn clockwise to the **START** position. Release the key into the **ON** position once engine has fired.

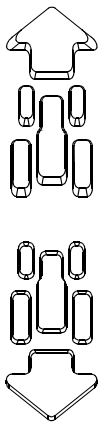
The ignition switch is also used to operate the tractor's headlights. To turn on the headlights, simply keep the key at the On/Lights position indicated on the switch and in the figure here.

**WARNING:** Never leave a running machine unattended. Always disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

## Cup Holder (if equipped)

The cup holder is located on the fender to the left of the seat, just to the rear of the parking brake lever.

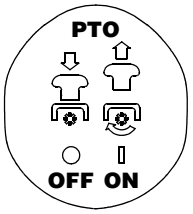
## Drive Pedal



This pedal is located below the brake pedal on the right front side of the tractor along the running board. Depress the upper portion of the drive pedal forward to move the tractor forward. Depress the lower portion of the drive pedal with the ball of your right foot (**not** your heel) to move the tractor in reverse. Ground speed is also controlled with the drive pedal. The further forward or rearward the pedal is pivoted, faster the tractor will travel. The pedal will return to its original position when it is not depressed.

**IMPORTANT:** Always set the parking brake when leaving the tractor unattended.

## PTO (Blade Engage) Knob




To engage power to the cutting deck or other (separately available) attachments, pull outward on the PTO knob. Push the PTO knob inward to disengage the power to the cutting deck.

**NOTE:** *The PTO knob **must** be in the disengaged (Blade Stop) position when starting the engine, when traveling in reverse and if the operator leaves the seat.*

## Seat Adjustment Lever

To adjust the seat forward or backward on units equipped with a **seat lever**, slide the seat adjustment lever to the left and reposition the seat to the desired position. Once a comfortable position is found, release the seat adjustment lever to lock the seat in place. Refer to page 14 of this manual for more details.

## Deck Lift Lever

Located on the tractor's right fender, the deck lift lever is used to change height of the cutting deck. To operate, move the lever to the left, then place in the notch best suited for your application.

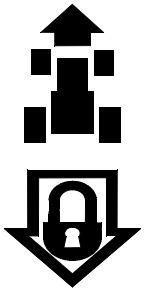
## Parking Brake Button

To set the parking brake, fully depress the brake pedal and push the parking brake button in. Hold the button in while taking your foot off the brake pedal. Both the parking button and the brake pedal will then stay depressed. To release the parking brake, depress the brake pedal slightly. The parking brake button will then return to its original position.

**NOTE:** *The parking brake must be set if the operator leaves the seat with the engine running or the engine will automatically shut off.*

**IMPORTANT:** Always set the parking brake when leaving the tractor unattended.

## Cruise Control Button



The cruise control button is located on the tractor dash panel to the left of the ignition switch. Push the cruise control button while traveling forward at a desired speed. While holding the button in, release pressure from the drive pedal. This will engage the cruise control and allow the tractor to remain at that speed without applying pressure to the drive pedal. Depress the brake pedal or the drive pedal to deactivate cruise control. Refer to page 12 for detailed instructions.

**NOTE:** *Cruise control cannot be engaged at the tractor's fastest ground speed. If the operator should attempt to do so, the tractor will automatically decelerate to the fastest optimal mowing ground speed.*

## Hour Meter

Located in the center of the tractor's console, the hour meter operates whenever the engine is running and records the actual hours of tractor operation.

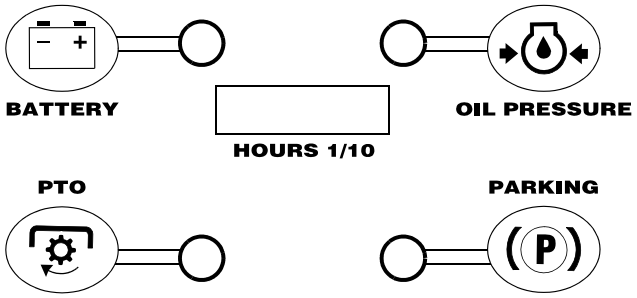



**Figure 4**

## System Indicator Lights

Your tractor is equipped with four indicator lights in the center of its dash panel. If the brake light or PTO light illuminates when attempting to start the unit, proceed as follows:

| Indication | Remedy |
|---|---|
| Brake light on | Engage the parking brake. |
| PTO light on | Move PTO knob to the disengaged(OFF) position. |

It is normal for the oil light and the battery light to illuminate while the engine is cranking, but if either illuminates while the engine is running, follow the steps below as per indication:

| Indication | Remedy |
|---|---|
| Oil light on | Stop the tractor immediately and check the crankcase oil level as instructed in the engine manual. Add oil as required. |
| Battery light on | The battery needs charging, or the engine's charging system is not generating sufficient amperage. Refer to page 21. |

# SECTION 5: OPERATING YOUR GARDEN TRACTOR

## Safety Interlock Switches

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should ever malfunction, do not operate the tractor; contact a Cub Cadet dealer. The safety interlock system prevents the engine from cranking or starting unless the parking brake is engaged, and the PTO knob is in the disengaged (OFF) position.

The engine will automatically shut off if

1. The operator leaves the seat before engaging the parking brake;
2. The operator leaves the tractor's seat with the PTO knob in the engaged (ON) position, regardless of whether the parking brake is engaged; and
3. The PTO knob is moved to engaged (ON) position with the shift lever in position for reverse travel.

**WARNING:** Do not operate the tractor if the interlock system is malfunctioning. This system was designed for your safety and protection.

## Setting the Cutting Height

- Select the height position of the cutting deck by placing the deck lift lever in any of the six different cutting height notches on the right side of the fender.
- Adjust the deck wheels so that they are between ¼-inch and ½-inch above the ground when the tractor is on a smooth, flat surface such as a driveway.

**WARNING:** Keep hands and feet away from the discharge opening of the cutting deck.

**NOTE:** *The deck wheels are an anti-scalp feature of the deck and are not designed to support the weight of the cutting deck.*

Refer to Leveling the Deck on page 15 of this manual for more detailed instructions regarding various deck adjustments.

## Starting the Engine

**NOTE:** *Refer to page 7 of this manual for gasoline and oil fill-up instructions.*

- Insert the tractor key into the ignition switch.
- Place PTO knob in the disengaged position.
- Engage the tractor's parking brake.
- Place the throttle control in the FAST (rabbit) position. Activate the choke if so equipped.
- Pull the choke control outward.
- Turn the ignition key clockwise to the START position. After the engine starts, release the key. It will return to the ON position.

**IMPORTANT:** Do **not** hold the key in the START position for longer than ten seconds at a time. Doing so may cause damage to your engine's electric starter.

- After the engine starts, deactivate the choke control and place the throttle control in the FAST position.

**NOTE:** *Do **not** leave the choke control on while operating the tractor. Doing so will result in a "rich" fuel mixture and cause the engine to run poorly.*

## Stopping the Engine

**WARNING:** If you strike a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before restarting and operating.

- If the blades are engaged, place the PTO knob in the disengaged (OFF) position.
- Turn the ignition key counterclockwise to the OFF position.
- Remove the key from the ignition switch to prevent unintended starting.

## Driving The Tractor

**IMPORTANT:** Avoid sudden starts, excessive speed and sudden stops.

- Briefly depress the brake pedal to release the parking brake. Move the throttle lever into the FAST (rabbit) position.
- **To travel forward:** Slowly depress the upper portion of the drive pedal forward until the desired speed is achieved. See Figure 5.

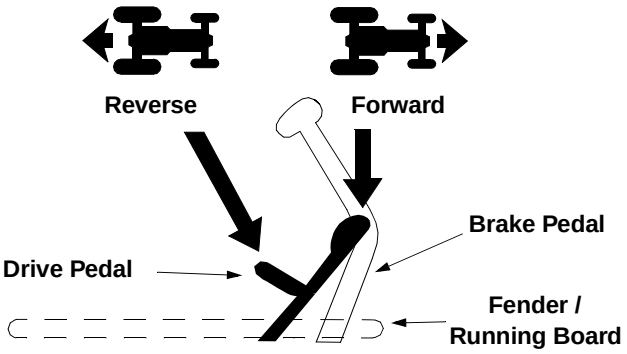



**Figure 5**

- **To travel in reverse:** Check that area behind is clear, then slowly depress the lower portion of the drive pedal with the ball of your foot (**not** your heel) until the desired speed is achieved. See Figure 5.

**IMPORTANT:** Do **not** attempt to change the direction of travel when the tractor is in motion. Always bring the tractor to a **complete** stop before pivoting the drive pedal from forward to reverse or vice versa.

**WARNING:** Do not leave the seat of the tractor without first placing the PTO knob in the disengaged (OFF) position, depressing the brake pedal and engaging the parking brake. If leaving the tractor unattended, also turn the ignition key off and remove the key.

## Using the Parking Brake

### To engage:

- Fully depress the brake pedal and hold it while gently pushing the parking brake button inward.
- Hold the parking brake button in while removing your foot from the brake pedal.
- Once engaged, the parking brake button and the brake pedal will lock in the DOWN position.

### To disengage:

- Slightly depress the brake pedal.

**NOTE:** *The parking brake must be engaged if the operator leaves the seat with the engine running, otherwise the engine will automatically shut off.*

## Moving the Tractor Manually

Your tractor's transmission is equipped with a relief valve for occasions when it is necessary to move the tractor manually. Activating this valve forces the transmission fluid to bypass its normal route, allowing the rear tires to "freewheel." To engage the relief valve, proceed as follows:

- Locate the hydrostatic bypass rod in the rear of the tractor. See Figure 6.

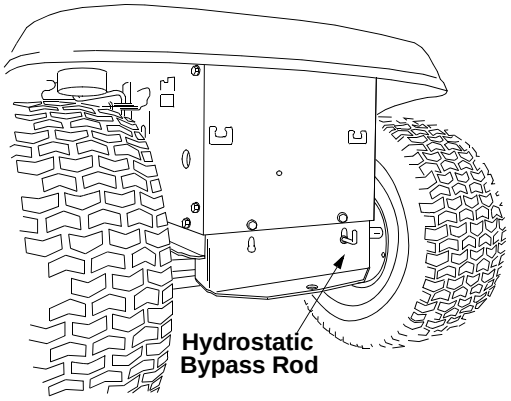



**Figure 6**

- Pull the hydrostatic bypass rod outward, then up, to lock it in place.

**NOTE:** *The transmission will **not** engage when the hydrostatic bypass rod is pulled out. Return the rod to its normal position prior to operating the tractor.*

**IMPORTANT:** Never attempt to move the tractor manually without first engaging the relief valve. Doing so will result in damage to the tractor's transmission.

## Driving On Slopes

Refer to SLOPE GAUGE on page 6 to help determine slopes where you may operate the tractor safely.

**WARNING:** Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury.

- Mow up and down slopes, never across.
- Exercise extreme caution when changing direction on slopes. Avoid turns when driving on a slope. If a turn must be made, turn downwards on the slope.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Turning upwards on a slope greatly increases the chance of a roll-over.
- Avoid stopping when driving up a slope. If it is necessary to stop while driving up a slope, start up smoothly and carefully to reduce the possibility of flipping the tractor over backward.

## Setting the Cruise Control

**NOTE:** *The cruise control feature should only be utilized while traveling in the forward direction.*

### Engaging Cruise Control

- Place the drive pedal in the FORWARD position, then slowly depress the drive pedal until the desired speed is achieved.
- Lightly depress the cruise control button.
- While continuing to hold the cruise button in, lift your foot from the drive pedal (you should feel the cruise latch engage).
- Once engaged, the cruise control button and the drive pedal will lock in the DOWN position, and the tractor will maintain the same forward speed.

**NOTE:** *Cruise control cannot be engaged at the tractor's fastest ground speed. If the operator should attempt to do so, the tractor will automatically decelerate to the fastest optimal mowing ground speed.*

### Disengaging Cruise Control

Choose one of the following two methods:

- Depress the brake pedal to disengage the cruise control and stop the tractor.
- Lightly depress the drive pedal.

**Changing to Reverse When Cruise Control is Engaged**

- Depress the brake pedal to disengage the cruise control and bring the tractor to a complete stop.
- Depress the lower portion of the drive pedal with the ball of your foot to travel in reverse.

## Using the Deck Lift Lever

To raise the cutting deck, move the deck lift lever to the left, then place it in the notch best suited for your application. Refer to **Setting The Cutting Height** earlier in this section.

## Engaging the PTO

Engaging the PTO transfers power to the cutting deck or other (separately available) attachments. To engage the PTO, proceed as follows:

- Move the throttle control lever to the FAST (rabbit) position.
- Pull the PTO knob outward into the engaged (ON) position. Keep the throttle lever in the FAST (rabbit) position for the most efficient use of the cutting deck or other (separately available) attachments.
- To disengage the PTO, push the PTO knob to the OFF position.

**IMPORTANT:** The PTO clutch will automatically shut off if the PTO is engaged with the drive pedal in position for reverse travel.

## Mowing

- Do not mow at high ground speed, especially if a mulch kit or grass collector is installed.
- For best results, cut the first two laps with the discharge thrown towards the center. Then reverse direction to throw discharge to the outside.
- Do not cut the grass too short. Short grass invites weed growth and yellows quickly in dry weather.
- Mowing should always be done with the engine at full throttle.
- Under heavier conditions it may be necessary to go back over the cut area to get a clean cut.
- Do not attempt to mow heavy brush and weeds and extremely tall grass. Your tractor is designed to mow lawns, not clear brush.
- Keep the blades sharp and replace the blades when worn. Refer to **Cutting Blades** on page 20 of this manual for proper blade sharpening instructions.

**WARNING:** To help avoid blade contact or a thrown object injury, keep bystanders, helpers, children and pets at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.

## Mulching

Your tractor may be equipped with a mulch kit with special blades to recirculate grass clippings into the lawn where they act as a natural fertilizer.

Observe following points for best results in mulching.

- Never attempt to mulch if the lawn is damp. Wet grass tends to stick to the underside of the deck preventing proper mulching.
- Do not attempt to mulch more than 1/3 the total height of the grass or approximately 1-1/2 inches. Maintain a slow ground speed to allow the grass clippings more time to effectively be mulched.
- Always position the throttle control lever in the FAST (rabbit) position while mowing. Failing to keep the engine at full throttle places strain on the tractor's engine and does not allow the blades to properly mulch grass.

**NOTE:** *It is not necessary to remove the discharge chute to operate the mower with the mulch kit installed.*

- To operate the cutting deck without mulching, simply remove the mulch plug by unthreading the plastic wing nut which fastens it to the cutting deck. This will allow clippings to discharge from the side.

# SECTION 6: MAKING ADJUSTMENTS

**WARNING:** Always disengage PTO, stop engine and remove key before performing any adjustments, repairs or maintenance..

## Parking Brake

Adjust the brake if:

1. the tractor does not stop completely when the brake pedal is completely depressed; or
2. the tractor's rear wheels roll even with the parking brake applied.

Locate the brake disc on right of the transmission in the rear of the tractor and adjust as follows:

- Looking at the transmission from the right side of the tractor, locate the compression spring and brake disc.
- Loosen, but do **not** remove, the hex nut found on the right side of the brake assembly.
- Using a feeler gauge, set the gap between the brake disc and the brake puck at .011".
- Re-tighten the hex nut loosened earlier.

## Steering

Adjust the steering drag links if

1. The tractor turns tighter in one direction than the other; or
2. While the ball joints are being replaced.

Adjust the drag links so that equal lengths are threaded into the ball joints on the left and the right respectively.

- Loosen the jam nut found on the drag link at the rear of the ball joint. See Figure 7.

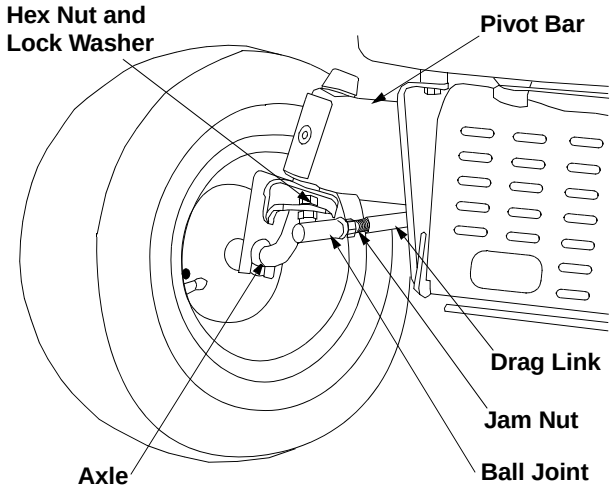



**Figure 7**

- Remove the hex nut and lock washer on the top of ball joint. See Figure 7.
- Thread the ball joint toward the jam nut to shorten the drag link. Thread the ball joint away from the jam nut to lengthen the drag link.
- Replace hex nut and lock washer and retighten the jam nut after proper adjustment is achieved.

**NOTE:** *Threading the ball joints too far onto the drag links will cause the front tires to "toe-in" too far. Proper toe-in is between 1/16" and 5/16".*

Front tire toe-in can be measured as follows:

- Place steering wheel in position for straight travel.
- In front of the axle, measure the distance horizontally from the inside of the left rim to the inside of the right rim. Note the distance.
- Behind the axle, measure the distance horizontally from the inside of the left rim to the inside of the right rim. Note the distance.
- The measurement taken in front of the axle should be between 1/16" and 5/16" less than the measurement taken behind the axle.

## Adjusting Deck Wheels

- Select the height position of the cutting deck by placing the deck lift lever in any of the six different cutting height notches on the right fender.

**WARNING:** Keep hands and feet away from the discharge opening of the cutting deck.

**NOTE:** *The deck wheels are an anti-scalp feature of the deck and are not designed to support the weight of the cutting deck.*

- Place the tractor on a firm and level surface, preferably pavement and proceed as follows:
- Place the tractor's deck lift handle in the normally desired mowing height setting, then check the deck wheels for contact or excessive clearance with the surface below.
- If the wheels contact the surface adjust as follows:
    a. Raise the deck lift handle to its highest setting.
    b. Remove the rear deck wheels by removing the lock nuts and shoulder screws that secure them to the deck. See Figure 8.
    c. Remove the lock nuts and shoulder screws, that secure the front deck wheels to the deck. See Figure 8.
    d. Place the deck lift handle in the desired mowing height setting.
    e. Insert the shoulder screw with the rear deck wheel into the index hole that leaves approximately 1/2" between the bottom of the wheel and the pavement.
    f. Note the position of the index hole used; then install the other rear deck wheel and the front ball wheels into the corresponding index hole of the other deck wheel brackets

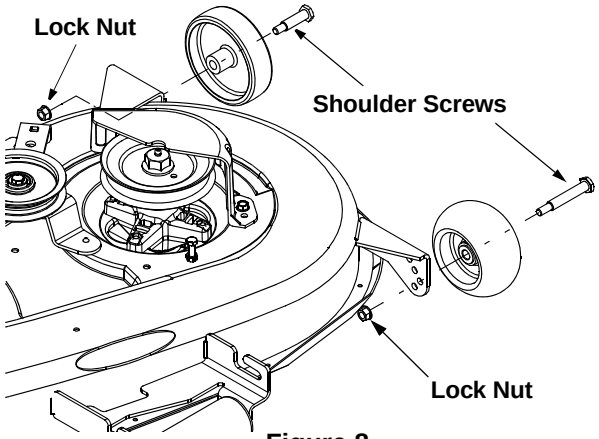



**Figure 8**

- If the gauge wheels have excessive clearance with the surface below, lower the wheels to the index hole that provides the approximate 1/2" clearance as described above.

Refer to **Leveling the Deck** on page 15 of this manual for more detailed instructions regarding various deck adjustments.

# Leveling the Deck

**NOTE:** *Check the tractor's tire pressure before performing any deck leveling adjustments. Refer to page 20 for information regarding tire pressure.*

## Front To Rear

The front of the cutting deck is supported by a stabilizer bar that can adjusted to level the deck from front to rear. The front of the deck should be between 1/4-inch and 3/8-inch lower than the rear of the deck. Adjust if necessary as follows:

- With the tractor parked on a firm, level surface, place the deck lift lever in the top notch (highest position) and rotate the blade nearest the discharge chute so that it is parallel with the tractor.
- Measure the distance from front of the blade tip to the ground and rear of the blade tip to the ground.

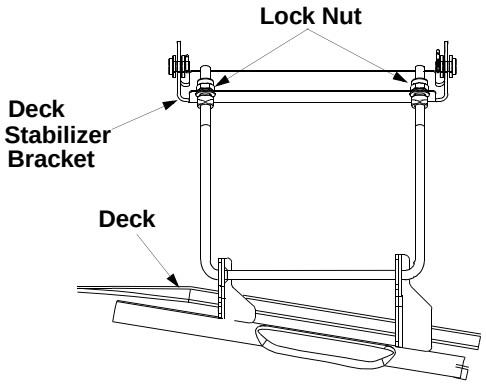



**Figure 9**

- The first measurement taken should be between 1/4" and 3/8" less than the second measurement. Determine the approximate distance necessary for proper adjustment and proceed to the next step.
- Locate the two lock nuts on the opposite side of the stabilizer bracket. See Figure 9. Tighten the lock nuts to raise the front of the deck; loosen the lock nuts to lower the front of the deck

## Side to Side

If the cutting deck appears to be mowing unevenly, a side to side adjustment can be performed. Adjust if necessary as follows:

- With the tractor parked on a firm, level surface, place the deck lift lever in the top notch (highest position) and rotate both blades so that they are perpendicular with the tractor.
- Measure the distance from the outside of the left blade tip to the ground and the distance from the outside of the right blade tip to the ground. Both measurements taken should be equal. If they're not, proceed to the next step.

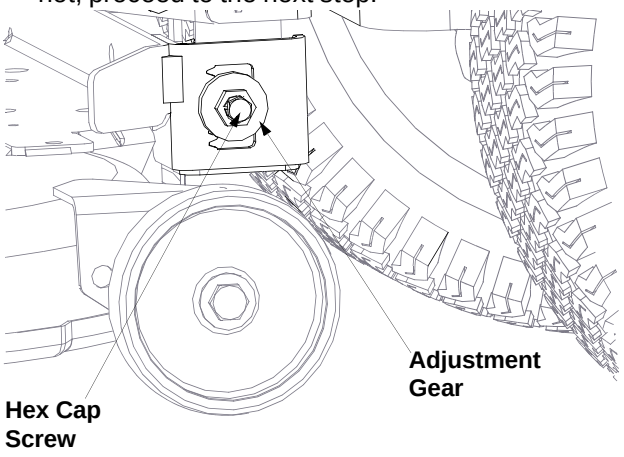



**Figure 10**

- Loosen, but do **not** remove, the hex cap screw on the left deck hanger bracket. See Figure 10.
- Balance the deck by using a wrench to turn the adjustment gear (found immediately behind the hex cap screw just loosened) clockwise/up or counterclockwise/down.
- The deck is properly balanced when both blade tip measurements, taken earlier, are equal.
- Retighten hex cap screw on the left deck hanger bracket when proper adjustment is achieved.

# Seat

- Move the seat adjustment lever (located under the seat) to the left and slide the seat forward or backward. Once the desired position is reached, release the lever and the seat should lock into one of the six adjustment positions.

**IMPORTANT:** The seat must be engaged in the seat stop for operating the tractor. Stand behind the machine and pull back on seat until fully engaged into stop.

# SECTION 7: MAINTAINING YOUR GARDEN TRACTOR

**WARNING:** Before performing any maintenance or repairs, disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

## Engine

The engine manual contains instructions for engine maintenance. Some general recommendations are listed below. For further details about performing these tasks, refer to the engine manual.

**NOTE:** *Maintenance and/or repair of emission control devices and systems on this tractor, done at customer's expense, may be performed by any engine repair establishment. Warranty-related repairs must be performed by a Cub Cadet dealer only.*

- Check engine oil level before each use. Fill up as necessary. Follow instructions below to change oil.
- Service pre-cleaner, if so equipped, and cartridge/ air cleaner element as instructed in the engine manual.
- Clean spark plugs and reset the gap once a season. Spark plug replacement is recommended at the start of each mowing season. Refer to the engine manual for correct plug type and gap specifications.

### Changing Engine Oil

- Raise the tractor's hood gently.
- Unscrew the oil fill cap and remove the dipstick from the oil fill tube. See Figure 11.

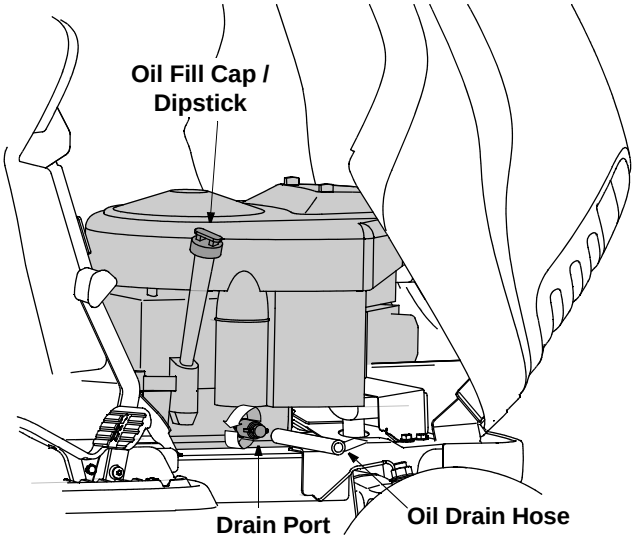



**Figure 11**

- Pop open the cap at the end of the oil drain valve and expose the drain port as shown in Figure 11.
- Push the oil drain hose, originally packed with this manual, on to the oil drain port. See Figure 11.
- Route the opposite end of the hose into an appropriate oil collection container with minimum 64 oz. capacity.
- Push oil drain valve in slightly, then rotate counter-clockwise and pull outward to begin draining oil.
- Service **oil filter** as instructed in engine manual.
- After the oil has drained completely, disconnect hose and shut off the cap on the oil drain valve.
- Refill engine with fresh motor oil of correct grade.
- Re-insert the dipstick and secure the oil fill cap.
- Flip the tractor hood back to operating position.

## Head Lamp

**WARNING:** If the engine has been recently run, the engine, muffler and surrounding metal surfaces will be hot and can cause burns to the skin. Allow the tractor to cool and use caution when changing the lamp bulbs.

- Lift the hood and locate the headlight wire harness and lamp sockets
- To remove the bulb & socket from the reflector housing, simply grasp the socket and gently rotate it 1/4 turn clockwise.
- After replacing the bulb, align the tab of the socket with the notch of the reflector and gently rotate it 1/4 turn counterclockwise.

## Cleaning Engine and Deck

- Promptly wipe off any fuel or oil spilled on the machine.
- Do not allow grass, leaves, and dirt to accumulate around the cooling fins of the engine or on any other part of the machine, especially the pulleys and other moving parts.

**IMPORTANT:** The use of a pressure washer to clean your tractor is not recommended. Direct water pressure on electrical components and the engine could reduce life of the tractor and its serviceability.

## Lubrication

**WARNING:** Before lubricating, repairing, or inspecting, always disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

### Engine

Lubricate the engine with motor oil as instructed in the *engine manual* .

### Pivot Points & Linkage

Lubricate all the pivot points on the drive system, parking brake and lift linkage at least once a season with light oil.

### Front Wheels

Each front wheel axle and rim are equipped with a grease fitting. Lubricate these with a grease gun every 25 hours of tractor operation. See Figure 12.

### Deck Spindles

Grease fittings are located on top of each deck spindle shaft. Lubricate with 251H EP grease or an equivalent #2 multi-purpose lithium grease. Using a grease gun, apply enough grease to flush out the old grease and dirt out of the spindle shaft. See Figure 12.

### Deck Wheels

Each front deck wheel is equipped with a grease fitting. Lubricate this with a grease gun every 25 hours of tractor operation.

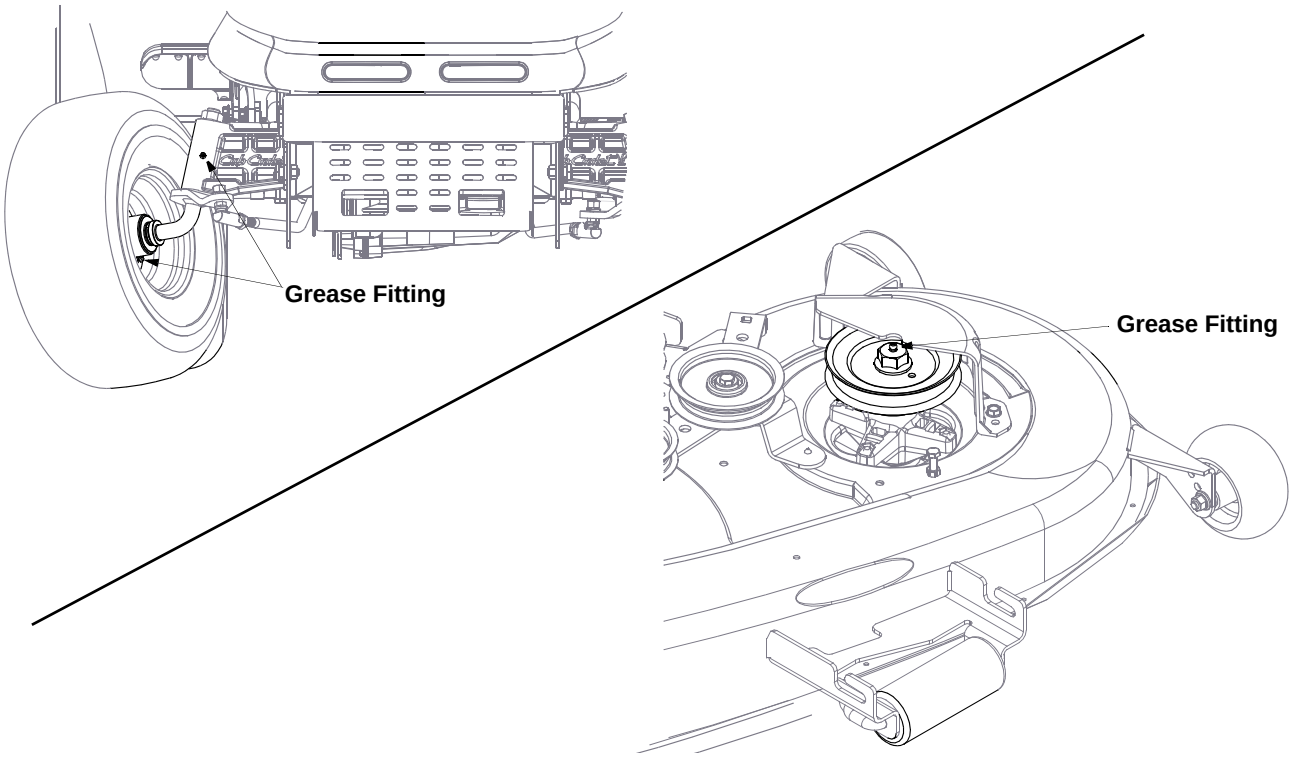



**Figure 12**

## Off-Season Storage

If your tractor will not be used for more than thirty days, it should be stored properly following instructions below:

- Clean and lubricate the tractor as instructed earlier in this section.
- Follow the engine manual for proper engine care prior to storing your tractor.
- Drain fuel only into an approved container outdoors, away from an open flame. Allow engine to cool. Extinguish cigarettes, cigars, pipes, and other sources of ignition prior to draining fuel.

**WARNING:** Never store the machine or fuel container indoors where there is an open flame, spark or pilot light such as on water heater, furnace, clothes dryer or other gas appliance.

# SECTION 8: SERVICE

## Cutting Deck Removal

To remove the cutting deck, proceed as follows:

- Place the PTO knob in the disengaged (OFF) position and engage the parking brake.
- Lower the deck by moving the deck lift lever into the bottom notch on the right fender.
- Remove the PTO belt from around the electric PTO clutch. Refer to Figure 14.
- Looking at the cutting deck from the left side of the tractor, locate the deck support pin on the rear left side of the deck.
- Pull the deck support pin outward to release the deck from the deck lift arm. See Figure 13.

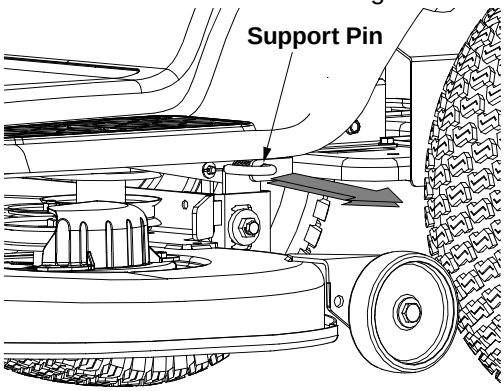



**Figure 13**

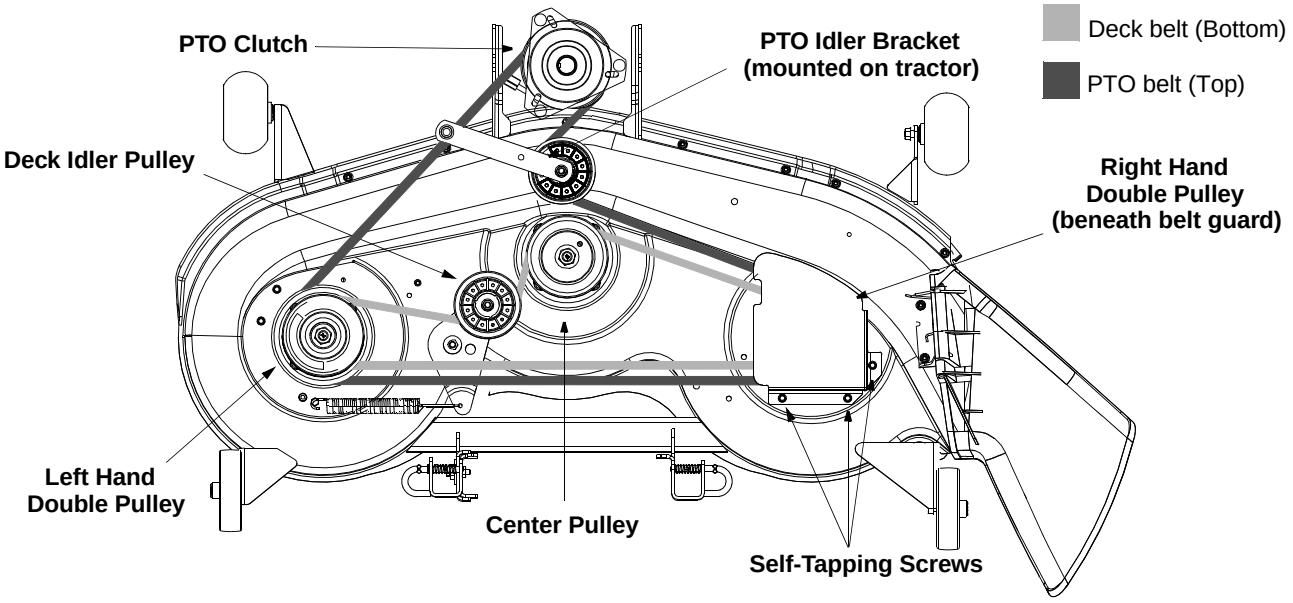
- Rotate the pin slightly toward the rear of the tractor and release the pin into the hole provided.
- Repeat the above steps on the tractor's right side.
- Move the deck lift lever into the top notch on the right fender to raise the deck lift arms up and out of the way.
- Gently slide the cutting deck toward the front of the tractor allowing the hooks on the deck to release themselves from the deck stabilizer rod.
- Gently slide the cutting deck from the right side underneath the tractor.

## Changing the Deck Belt(s)

**WARNING:** Be sure to shut the engine off, remove ignition key, disconnect the spark plug wire(s) and ground against the engine to prevent unintended starting before removing the belt(s).

All belts on your tractor are subject to wear and should be replaced if any signs of wear are present.

**IMPORTANT:** The V-belts found on your tractor are specially designed to engage and disengage safely. A substitute (non-OEM) V-belt can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts.




**NOTE:** Left hand belt cover not shown for clarity.

**Figure 14**

To change or replace the deck belts on your tractor, proceed as follows:

- Lower the deck by moving the deck lift lever into the bottom notch on the right fender.
- Remove the belt guards by removing the self-tapping screws that fasten them to the deck.
- Remove the PTO belt from the electric PTO clutch and from around the PTO idler pulley, if present. See Figure 14.
- Grasp the deck idler pulley and pivot it toward the left side of the deck to relieve tension on the belt.
- Remove the belt from around all spindle pulleys, and deck idler pulley(s).
- According to your tractor model, route the new belts as shown in Figure 14.
- Remount the belt guards removed earlier.

## Changing the Transmission Drive Belt

**WARNING:** Be sure to shut the engine off, remove ignition key, disconnect the spark plug wire(s) and ground against the engine to prevent unintended starting before removing the belt(s).

All belts on your tractor are subject to wear and should be replaced if any signs of damage are observed.

**IMPORTANT:** The V-belts on your tractor are specially designed to engage and disengage safely. A substitute (non-OEM) V-belt can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts.

To change or replace the drive belt on your tractor, proceed as follows:

- Remove the cutting deck as instructed earlier.
- After disconnecting the battery cables, remove the battery and battery tray from beneath the seat.

**IMPORTANT:** When removing the battery, disconnect the **negative** (black) wire from its terminal first, followed by the **positive** (red) wire. Re-install in **reverse** order.

**NOTE:** *Proper removal of the drive belt requires the removal of several tractor components. Read through the following procedure prior to attempting it; determine if you can successfully complete it. Otherwise see an authorized service dealer .*

**IMPORTANT:** Note the routing of the lower drive belt around all the pulleys and the belt keepers (if present) **before** performing the following steps.

- Locate the fixed v-idler pulley found on the left underside of the frame. See Figure 15.
- Grasp the belt on both sides of the pulley and gently move it toward the left frame rail allowing it to unseat itself from the fixed v-idler. See Figure 15.

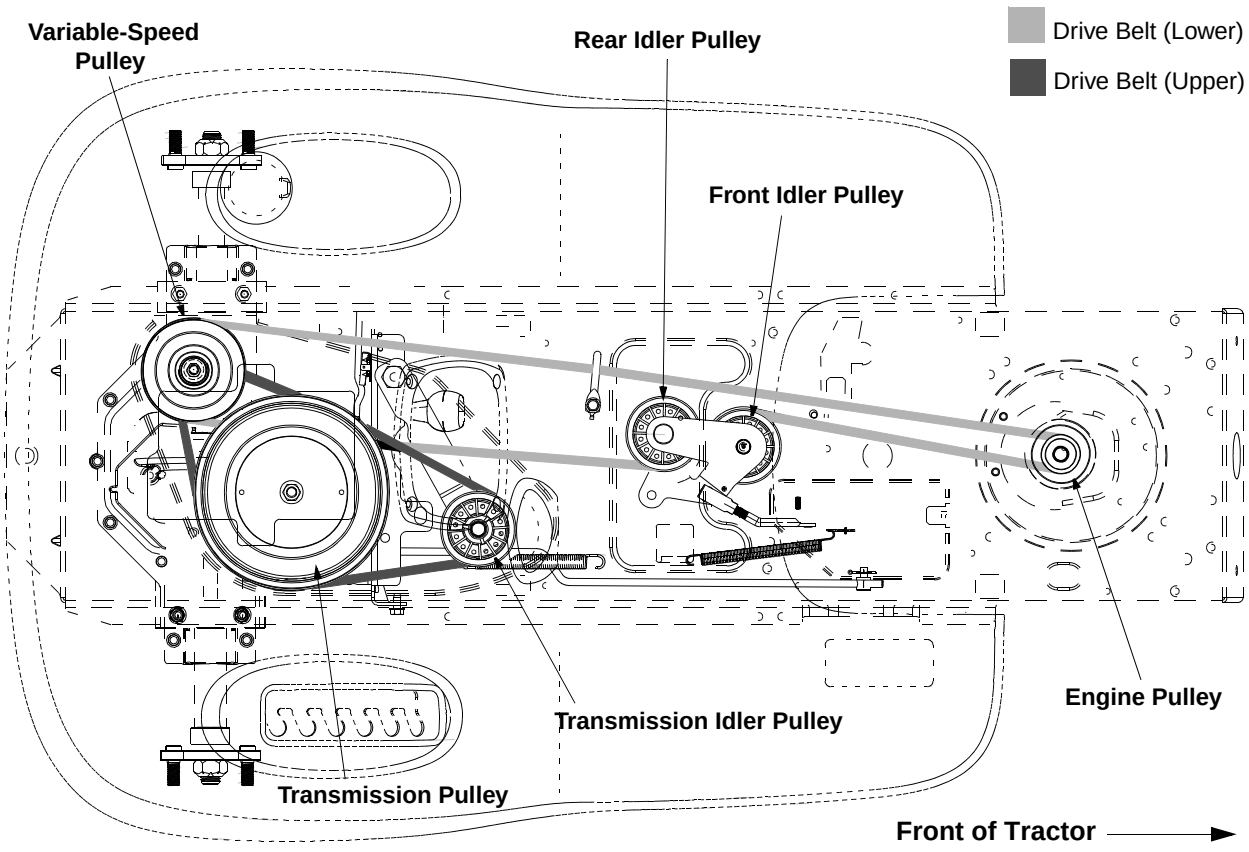



**Figure 15**

- Pivot the double-idler bracket forward slightly before removing the idler extension spring from the stud and the double-idler bracket itself. Do **not** discard the spring.
- Roll the drive belt out from around both the v-idler pulley and the flat idler pulley found on the double-idler bracket.
- Carefully unplug the tractor's wire harness from the connector on the electric PTO clutch.
- Remove the hex bolt from the center of the electric PTO clutch. Gently lower it off the engine crankshaft, making sure not to lose any hardware. See Figure 15.
- The engine pulley is located directly above the electric PTO clutch. Lower the engine pulley far enough to be able to remove the upper drive belt from around it. Be careful not to lose the square key which acts as a guide for the engine pulley on the crankshaft.

**IMPORTANT:** When remounting the electric PTO clutch or the engine pulley, as equipped, torque the center hex bolt to between 38 foot-pounds and 50 foot-pounds.

- Remove the drive belt by feeding it from front to rear, toward the hydrostatic transmission. See Figure 15.
- Continue removing the drive belt by gently lifting it off the transmission pulley and over the cooling fan.

**IMPORTANT:** The fins on the cooling fan are only slightly flexible. Be careful not to damage the fan when removing drive belt from around transmission pulley.

- Reroute the new belt around the pulleys and belt keepers, if present, **exactly** as the old one was routed. Refer to Figure 15.

## Tires

**WARNING:** Never exceed the maximum inflation pressure shown on the tire sidewall.

Refer to the tire sidewall for exact tire manufacturer's recommended or maximum psi. Do not overinflate. Uneven tire pressure could cause the cutting deck to mow unevenly.

## Cutting Blades

**WARNING:** Be sure to shut the engine off, remove ignition key, disconnect the spark plug wire(s) and ground against the engine to prevent unintended starting before removing the cutting blade(s) for sharpening or replacement. Protect your hands by using heavy gloves or a rag to grasp the cutting blade.

- Periodically inspect the blade adapter and/or spindle for cracks or damage, especially if you strike a foreign object. Replace immediately if damaged.

The blades may be removed as follows:

- Remove the deck from beneath the tractor, (refer to **Cutting Deck Removal** on page 18) then gently flip the deck over to expose its underside.
- Place a block of wood between the center deck housing baffle and the cutting blade to act as a stabilizer. See Figure 16.

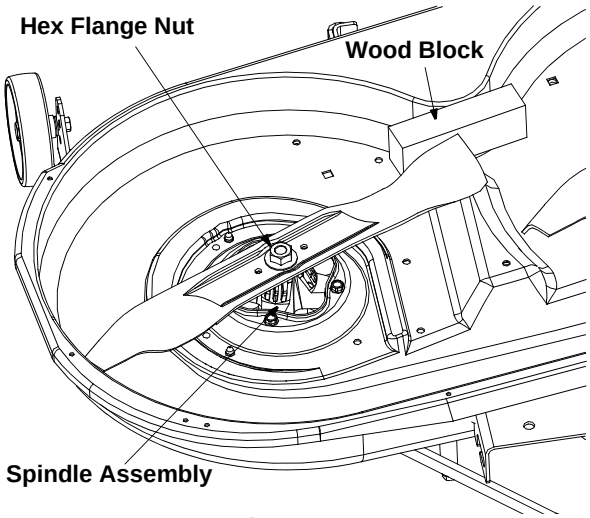



**Figure 16**

- Use a 15/16" wrench to remove the hex flange nut that secures the blade to the spindle assembly. See Figure 16.
- To properly sharpen the cutting blades, remove equal amounts of metal from both ends of the blades along the cutting edges, parallel to the trailing edge, at a 25° to 30° angle. See Figure 17.

**IMPORTANT:** If the cutting edge of the blade has already been sharpened to within 5/8" of the wind wing radius, or if any metal separation is present, replace the blades. See Figure 17.

- Grind each cutting blade edge equally to maintain proper blade balance.

**WARNING:** A poorly balanced blade will cause excessive vibration, may damage the tractor and cause personal injury.

- Test the blade by balancing it on a round shaft screwdriver. Grind metal from the heavy side until it balances evenly.
- When replacing the blade, be sure to install the blade with the side of the blade marked ''Bottom'' (or with a part number stamped in it) facing the ground when the mower is in the operating position.

**IMPORTANT:** Use a torque wrench to tighten the blade spindle hex flange nut to between 70 foot-pounds and 90 foot-pounds.

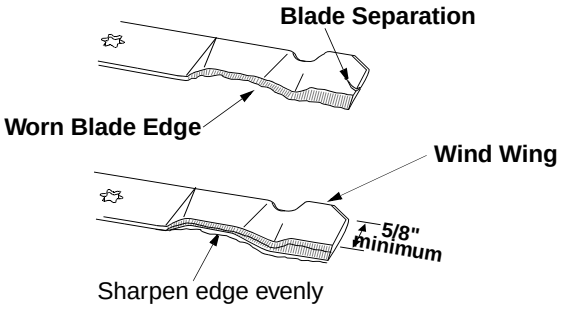



**Figure 17**

**WARNING:** Before servicing, repairing, or inspecting, always disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

## Fuses

Two fuses are installed in your tractor's wiring harness to protect the tractor's electrical system from damage caused by excessive amperage.

- If the electrical system does not function, or your tractor's engine will not crank, first check to be certain that the fuse has not blown. One fuse is located under the hood mounted behind the top of the dash panel on the support bar. The other can be found under the seat mounted to the inside of the tractor frame next to the battery tray. Pull the fuse out and inspect it to determine if it is good or blown. Replace if necessary.

**IMPORTANT:** Always use a fuse with the same amperage capacity for replacement.

## Battery

The battery is sealed and is maintenance-free. Acid levels cannot be checked.

- Always keep the battery cables and terminals clean and free of corrosive build-up.
- After cleaning the battery and terminals, apply a light coat of petroleum jelly or grease to both terminals.

**IMPORTANT:** Always keep the rubber boot positioned over the positive terminal to prevent shorting.

**IMPORTANT:** If removing the battery for any reason, disconnect the **negative** (black) wire from its terminal first, followed by the **positive** (red) wire. When re-installing the battery, always connect the **positive** (red) wire its terminal first, followed by the **negative** (black) wire. Be certain that the wires are connected to the correct terminals; reversing them could change polarity and damage the engine's alternating system.

### Charging

- If the tractor has not been used for an extended period of time, use a voltmeter or load tester to measure the charge. The voltmeter should read 12.6 V or higher for adequate charge. Otherwise, charge the battery with an automotive-type 12-volt charger for a minimum of one hour at six amps. Follow the chart below to charge:

| **Voltmeter Reading** | **State of Charge** (percentage) | **Charging Time** (minutes) |
|---|---|---|
| 12.7 | 100 | 0 |
| 12.4 | 75 | 90 |
| 12.2 | 50 | 180 |
| 12 | 25 | 280 |

**WARNING:** Batteries give off an explosive gas while charging. Charge the battery in a well ventilated area and keep away from an open flame or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.

### Jump-Starting

**IMPORTANT:** Do not jump-start a damaged battery. Before connecting the jumper cables, make sure that the two equipment are not in contact and their ignitions are turned off. Follow the sequence described below very closely.

- Connect the positive (+) lead of the jumper cable to the positive (+) post of the discharged battery.
- Connect the other end of the positive (+) jumper cable to the positive (+) post of the good battery.
- Connect one end of the negative (-) jumper cable to the negative (-) post of the good battery.
- Connect the other end of the negative (-) cable to the engine block of the stalled tractor, **away** from the battery, and stand back.
- Start the stalled tractor and leave it running to charge the battery.
- Disconnect negative (-) jumper cable from tractor.
- Disconnect the other end of the negative (-) jumper cable from the negative (-) post of the good battery.
- Disconnect the positive (+) jumper cable from the positive (+) post of the good battery.
- Disconnect the other end of the positive (+) jumper cable from the formerly dead battery.

## Hydrostatic Transmission

The hydrostatic transmission is sealed at the factory and is maintenance free. The fluid level cannot be checked nor can the oil be changed. **Always** keep the area around the transmission cooling fan free of grass and debris at all times.

# SECTION 9: TROUBLESHOOTING

| Trouble | Possible Cause(s) | Corrective Action |
|---|---|---|
| Engine fails to start | PTO knob engaged.<br>Parking brake not engaged.<br>Spark plug wire(s) disconnected.<br>Throttle control lever not in correct starting position.<br>Choke not activated<br>Fuel tank empty, or stale fuel.<br>Blocked fuel line.<br>Faulty spark plug.<br>Engine flooded. | Place PTO knob in disengaged (OFF) position.<br>Engage parking brake.<br>Connect wire(s) to spark plug.<br>Place throttle lever to FAST position.<br><br>Pull out the CHOKE control (if so equipped).<br>Fill tank with clean, fresh (less than 30 days old) gas.<br>Clean fuel line or replace fuel filter, if so equipped.<br>Clean, adjust gap or replace plug.<br>Crank engine with throttle in FAST position. |
| Engine runs erratic | Unit running with CHOKE applied.<br>Spark plug wire(s) loose.<br>Blocked fuel line or stale fuel.<br><br>Vent in gas cap plugged.<br>Water or dirt in fuel system.<br><br>Dirty air cleaner. | Push CHOKE control in (if equipped).<br>Connect and tighten spark plug wire(s).<br>Clean fuel line; fill tank with clean, fresh (less than 30 days old) gasoline. Replace fuel filter, if so equipped.<br>Clear vent or replace cap if damaged.<br>Drain fuel tank. Refill with clean, fresh (less than 30 days old) gasoline.<br>Replace air cleaner cartridge/element or clean pre-cleaner, if so equipped. |
| Engine overheats | Engine oil level low.<br>Air flow restricted. | Fill crankcase with proper capacity and weight of oil.<br>Clean grass clippings and debris from around the engine's cooling fins and blower housing. |
| Engine hesitates at high RPM | Spark plug(s) gap too close. | Remove spark plug(s) and reset the gap to .030" . |
| Idles poorly | Spark plug(s) fouled, faulty or gap too wide.<br>Dirty air cleaner. | Replace spark plug(s). Set plug(s) gap to .030" .<br><br>Replace air cleaner cartridge/element or clean pre-cleaner, if so equipped. |
| Excessive vibration | Cutting blade loose or unbalanced.<br>Damaged or bent cutting blade. | Tighten blade and spindle. Balance blade.<br>Replace blade. |
| Mower will not mulch grass | Engine speed too low.<br>Wet grass.<br>Excessively high grass.<br><br>Dull blade. | Place throttle in FAST (rabbit) position.<br>Do not mow when grass is wet; wait until later to cut.<br>Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath.<br>Sharpen or replace blade. |
| Uneven cut | Deck not balanced properly.<br>Dull blade.<br>Uneven tire pressure. | Perform side-to-side deck adjustment.<br>Sharpen or replace blade.<br>Check tire pressure in all four tires. |

# SECTION 10: SPECIFICATIONS

| | |
|---|---|
| **Capacities** | |
| Fuel Tank | 3 gallons (11.4 l) |
| Crankcase (approximately) | 4 pints / 64 oz. (1.9 l) |
| **Hydrostatic Transmission** | |
| Make and Model | *Hydro-Gear* 311-3000 |
| Gear Ratio | 30.6:1 |
| Forward Speed | 0 m.p.h. - 5.5 m.p.h. |
| Reverse Speed | 0 m.p.h. - 2.5 m.p.h. |
| **Engine (Air-cooled, 4-cycle)** | |
| Make, Model & Type | *Briggs & Stratton* 40H777-0171 |
| Cylinders | Twin |
| Bore | 2.97 in. (75.44 mm) |
| Stroke | 2.89 in. (73.4 mm) |
| Displacement | 40.0 cu. in. (656 cc) |
| Maximum Power @3600 RPM | 22 HP |
| Maximum Torque @2400 RPM | 32.7 lbs. ft. (44.3 Nm) |
| Compression Ratio | 8.5:1 |
| **Engine Speed (governed)** | |
| Low Speed | 1200 RPM |
| High Speed (no load) | 3300 RPM (± 100 RPM) |
| Spark Plug Gap | .030 in. (.76 mm) |
| Armature Air Gap | .008 -.012 in. (.20 -.30 mm) |
| **Electrical System** | |
| System Voltage | 12-volt Negative Ground |
| Battery | 270 CCA (sealed) |
| Alternator | 16 Amp Regulated |
| Fuse (automotive type) | 20 Amp |
| Headlights | Incandescent |
| **Brakes** | Single Disc (Dry) |
| **Turf Tires** | |
| Front (inches) | 16 x 6.5 |
| Rear (inches) | 23 x 9.5 |
| **Dimensions** | |
| Wheelbase | 48 in. (121.92 cm) |
| Length, over all | 68.5 in. (173.99 cm) |
| Height, over all | 42 in. (106.68 cm) |
| Ground Clearance | 6 in. (15.2 cm); Ground Clearance for Deck: 1.75 in. (4.445 cm.) |
| Turning Radius | 21 in. (53.34 cm) |
| Weight (approximate) | 529 lb (238.28 kg) |

# SECTION 11: ATTACHMENTS

The following attachments are compatible for **Model GT 1222**. See your *Cub Cadet* dealer or the retailer from where you purchased your tractor for information regarding price and availability.

| MODEL | DESCRIPTION |
|---|---|
| Attachments | |
| 190-604-101 | Yard-Mate™ Storage Container/Toolbox (mounts on rear of tractor) |
| (CC-)190-671(-100)* | Rear Tire Chain Set (20” x 9”) |
| (CC-)190-672(-100)* | Front Bumper Kit |
| (CC-)190-673(-100)* | 42-inch Two-stage Snow Thrower |
| (CC-)190-674(-100)* | 46-inch Front Dozer Blade |
| (CC-)190-675(-100)* | Rear Wheel Weight Set |
| 190-459-100 | 46" Lawn Sweeper |
| 190-653-100 | 10 Cu. Ft. Dump Cart 16" Wheels |
| 190-458-100 | 15 Cu. Ft. Dump Cart 15" x 6" Wheels |
| 190-425-100 | 17 Cu. Ft. Dump Cart 15" x 6" Wheels |

* Attachments purchased through a merchandise retailer may have a “CC” model number prefix. Attachments purchased through your *Cub Cadet* dealer may have a “100” model number suffix.

# YOUR NOTES

| Date | Comments |
| --- | --- |
| | |

| Date | Comments |
| --- | --- |
| | |

# CUB CADET LLC.

## Manufacturer's Limited Warranty (Commercial Use)

The limited warranty set forth below is given by CUB CADET LLC ("CUB CADET") with respect to new merchandise purchased and used in the United States, its possessions and territories.

CUB CADET warrants this product against defects in material and workmanship for a period of one (1) year for commercial users, commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster.

Batteries and belts are subject to separate terms as follows:

a. Batteries have a one-year prorated limited warranty with 100% replacement during the first three months. After three months, the battery replacement credit is based on the months remaining in the twelve (12) month period dating back to the original date of sale. Any replacement battery will be warranted only for the remainder of the original warranty period.
b. All belts are covered by a one (1) year limited warranty against defects in material and workmanship.

**HOW TO OBTAIN SERVICE:** Warranty service is available, with **proof of purchase**, through your local authorized Cub Cadet dealer. To locate the dealer in your area, please check for a listing at www.cubcadet.com, or in the Yellow Pages or contact CUB CADET by calling 1-877-CUB TOUGH (1-877-282-8684) or writing to P.O. Box 361131, Cleveland, Ohio 44136-0019.

**This limited warranty does not provide coverage in the following cases**:

Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.

Normal wear parts or components, including blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires.

CUB CADET does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through CUB CADET'S authorized channels of export distribution.

**No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including the dealer, with respect to any product shall bind CUB CADET. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above.** (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

**The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sale. CUB CADET shall not be liable for incidental or consequential loss or damages including, without limitation, to any claim for loss of profits, loss of savings or revenue, loss of the use of the equipment or any associated equipment, facilities or service, downtime, the claims or costs of third parties including customers, and injury to property, and further including expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product**. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or original lessee.

**How State Law Relates to this Warranty:** This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

# CUB CADET LLC.

## Manufacturer's Limited Warranty (Residential Use)

The limited warranty set forth below is given by CUB CADET LLC ("CUB CADET") with respect to new merchandise purchased and used in the United States, its possessions and territories.

CUB CADET warrants this product against defects in material and workmanship for a period of two (2) years for residential users commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster.

Batteries and belts are subject to separate terms as follows:

Batteries have a one-year prorated limited warranty with 100% replacement during the first three months. After three months, the battery replacement credit is based on the months remaining in the twelve (12) month period dating back to the original date of sale. Any replacement battery will be warranted only for the remainder of the original warranty period.

All belts are covered by a one (1) year limited warranty against defects in material and workmanship.

### 3- Year Limited Warranty: PTO Clutch

CUB CADET warrants the power take off ("PTO") clutch and mounting hardware against defects in material and workmanship for a period of three (3) years for Series 1000 products manufactured after August 1, 1997 for residential users, commencing on the date of original purchase or lease and CUB CADET will, at its option, repair or replace, free of charge, any PTO clutch or mounting hardware found to be defective in material or workmanship provided this product has been operated and maintained as set forth above.

### 5-Yr./500-Hr. Limited Warranty: Frame & Front Axle

CUB CADET warrants the frame, and front cast iron pivot axle on Series 1500 models against defects in material and workmanship for a period of **five (5) years or 500 hours, whichever occurs first,** for residential users, commencing on the date of original purchase or lease and CUB CADET will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship provided this product has been operated and maintained as set forth above. In addition to any other reason set forth herein, CUB CADET may deny warranty coverage if the hour meter, or any part thereof, is altered, modified, disconnected or otherwise tampered with.

**HOW TO OBTAIN SERVICE:** Warranty service is available, **with proof of purchase,** through your local authorized Cub Cadet dealer. To locate the dealer in your area, please check for a listing at www.cubcadet.com or in the Yellow Pages or contact CUB CADET by calling 1-877-CUB TOUGH (1-877-282-8684) or writing to P.O. Box 361131, Cleveland, Ohio 44136-0019.

**This limited warranty does not provide coverage in the following cases:**

Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.

CUB CADET does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through CUB CADET's authorized channels of export distribution.

Normal wear parts or components, including blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, rubber auger spirals, shave plates and tires.

**No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including the dealer, with respect to any product shall bind CUB CADET. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above.** (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

**The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. CUB CADET shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product.** (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or original lessee.

**How State Law Relates to this Warranty:** This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.